

LIST OF CLAIMS

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1. (Currently Amended) Method for signing ~~an~~ a live object comprising the steps of:
- instantiating a live object in a runtime environment;
- taking a snapshot of ~~the~~ said live object, wherein ~~the~~ said taking said snapshot ~~represents the object at a point of execution~~ is performed by serializing a state of said live object;
- associating a signature with said snapshot; and
- maintaining said association between said snapshot and said signature.
2. (Currently Amended) The method of claim 1 further comprising ~~the steps~~ of:
- verifying said signature; and
- constructing a new object using said snapshot, when said signature is verified.
3. (Currently Amended) The method of claim 1 further comprising ~~the steps~~ of:
- storing said snapshot in another object; and
- storing said signature in said another object.
4. (Currently Amended) The method of claim 1 further comprising ~~the steps~~ of:
- monitoring ~~the~~ a status of said snapshot; and
- invalidating said signature when ~~the~~ said status of said snapshot changes.

5. (Currently Amended) The method of claim 1 further comprising ~~the step~~
of:

creating said signature using said snapshot.

6. (Currently Amended) The method of claim 5 further comprising ~~the step~~
of:

associating a second signature with said snapshot.

7. (Currently Amended) The method of claim 6 further comprising ~~the steps~~
of:

verifying said second signature; and

constructing a new object using said snapshot, when said second signature is
verified.

8. (Currently Amended) ~~Method for sealing an object~~ The method of claim
1 further comprising the steps of:

generating an encryption key;

~~taking a snapshot of the object, wherein the snapshot represents the object at a~~
~~point of execution;~~

generating an encrypted snapshot of said snapshot;

deleting said snapshot; and

associating said signature with said encrypted snapshot, said signature previously
being associated with said snapshot.

9. (Currently Amended) The method of claim 8 further comprising: ~~the step~~
~~of associating a signature with said snapshot~~

maintaining said association between said encrypted snapshot and said signature associated with said encrypted snapshot.

10. (Currently Amended) The method of claim 9 further comprising the steps of:

verifying said signature associated with said encrypted snapshot; and

constructing a new object using encrypted said snapshot, when said signature associated with said encrypted snapshot is verified.

11. (Currently Amended) A computer program product for signing a live object comprising a computer readable medium having recorded thereon: An article of manufacturing comprising:

a computer usable medium having computer readable program code embodied therein for signing an object comprising:

computer program code for causing a computer to instantiate a live object in a runtime environment;

computer readable program code configured to cause computer program code for causing a computer to take a snapshot of the said live object by serializing a state of said live object wherein the snapshot represents the object at a point of execution;

computer readable program code configured to cause computer program code for causing a computer to associate a signature with said snapshot; and

computer readable program code configured to cause computer program code for causing a computer to maintain said association between said snapshot and said signature.

12. (Currently Amended) ~~The article of manufacture~~ The computer program product of claim 11 further comprising:

~~computer readable program code configured to cause~~ computer program code for causing a computer to verify said signature; and

~~computer readable program code configured to cause~~ computer program code for causing a computer to construct a new object using said snapshot, when said signature is verified.

13. (Currently Amended) ~~The article of manufacture~~ The computer program product of claim 11 further comprising:

~~computer readable program code configured to cause~~ computer program code for causing a computer to store said snapshot in another object; and

~~computer readable program code configured to cause~~ computer program code for causing a computer to store said signature in said another object.

14. (Currently Amended) ~~The article of manufacture~~ The computer program product of claim 11 further comprising:

~~computer readable program code configured to cause~~ computer program code for causing a computer to monitor ~~the~~ a status of said snapshot;

~~computer readable program code configured to cause~~ computer program code for causing a computer to invalidate said signature when ~~the~~ said status of said snapshot changes.

15. (Currently Amended) ~~The article of manufacture~~ The computer program product of claim 11 further comprising:

~~computer readable program code configured to cause~~ computer program code for
causing a computer to create said signature using said snapshot.

16. (Currently Amended) ~~The article of manufacture~~ The computer program
product of claim 11 further comprising:

~~computer readable program code configured to cause~~ computer program code for
causing a computer to associate a second signature with said snapshot.

17. (Currently Amended) ~~The article of manufacture~~ The computer program
product of claim 16 further comprising:

~~computer readable program code configured to cause~~ computer program code for
causing a computer to verify said second signature; and

~~computer readable program code configured to cause~~ computer program code for
causing a computer to construct a new object using said snapshot, when said second
signature is verified.

18. (Currently Amended) ~~An article of manufacturing~~ The computer
program product of claim 11 further comprising:

~~a computer usable medium having computer readable program code embodied~~
~~therein for sealing an object comprising:~~

~~computer readable program code configured to cause~~ computer program code for
causing a computer to generate an encryption key;

~~computer readable program code configured to cause a computer to take a~~
~~snapshot of the object, wherein the snapshot represents the object at a point of~~
~~execution;~~

~~computer readable program code configured to cause~~ computer program code for causing a computer to encrypt said snapshot;

~~computer readable program code configured to cause~~ computer program code for causing a computer to delete said snapshot ; and

~~computer readable program code configured to cause~~ computer program code for causing a computer to associate said signature with said encrypted snapshot, said signature previously being associated with said snapshot.

19. (Currently Amended) ~~The article of manufacture~~ The computer program product of claim 18 further comprising:

~~computer readable program code configured to cause~~ computer program code for causing a computer to decrypt said encrypted snapshot.

20. (Currently Amended) ~~The article of manufacture~~ The computer program product of claim 18 further comprising:

~~computer readable program code configured to cause a computer to associate a signature with said snapshot~~ computer program code for causing a computer to maintain said association between said encrypted snapshot and said signature associated with said encrypted snapshot.

21. (Currently Amended) ~~The article of manufacture~~ The computer program product of claim 20 further comprising:

~~computer readable program code configured to cause~~ computer program code for causing a computer to verify said signature associated with said encrypted snapshot; and

~~computer readable program code configured to cause~~ computer program code for causing a computer to construct a new object using said encrypted snapshot, when said signature associated with said encrypted snapshot is verified.

22. (Currently Amended) A system configured to sign ~~an~~ a live object existing in a runtime environment, said system comprising:

a first module of program code executing on a computer configured to take a snapshot of ~~an a live~~ object, wherein ~~said the snapshot represents the object at a point of execution~~ is a serialization of a state of said live object; and

a second module of program code executing on said computer configured to generate a signature using said snapshot;

said first module configured to monitor ~~the~~ a status of said snapshot, and to invalidate said signature when said snapshot is changed.

23. (Original) The system of claim 22 wherein said first and second modules are implemented as a second object.

24. (Original) The system of claim 23 wherein said snapshot and said signature are stored in said second object, said second object limiting access to said snapshot through one or more methods of said second object.

25. (Original) The system of claim 24 wherein said one or more methods of said second object invalidate said signature when said access modifies said snapshot.

26. (Currently Amended) The system of claim 22 further comprising a sealing module comprising:

a key generation module configured to generate an encryption key;

an encryption module configured to generate an encrypted snapshot from said snapshot; and

a deletion module configured to delete said snapshot.

27. (Previously Amended) The system of claim 26 wherein said second module is configured to invoke said key generation module, said encryption module and said deletion module.

28. (Currently Amended) The system of claim 27 wherein said second object is configured to verify said signature and construct a new object using said encrypted snapshot when said signature is verified.
